User's Manual

K500 OPTIMA

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Rev. A

FOREWORD

This manual contains installation and operation information for the CIM K500 Optima Series card printers manufactured by CIM.

RETURN MATERIALS AUTHORIZATION

Before returning any equipment to CIM S.p.A. for in-warranty or out-of-warranty repair, contact Repair Administration for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

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WARRANTY INFORMATION

WE NEED TO HEAR FROM YOU!
To establish your warranty period and provide access to technical support, send us your warranty registration card today!

CIM warrants the mechanism, control electronics and power supply, under normal use and service, to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase by the end user. If proof of purchase or product registration cannot be established, shipment date to the original buyer (dealer or distributor) will be used to establish the warranty period.

Failure to exercise caution to protect the equipment from electrostatic discharge damage, adverse temperature and humidity conditions or physical abuse, including, but not limited to, improper packaging, shipping, service or repairs performed by personnel not authorized by CIM may void the warranty. CIM will, as its option, repair or replace the equipment or any parts which are determined to be defective within this warranty period, and which are returned to CIM.

The warranty set forth above is exclusive and no other warranty, whether written or oral, is expressed or implied. CIM specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

DECLARATIONS OF CONFORMITY

CE

European Council Directive		Compliance to Standards	
89/336/EEC modified by 92/31/EEC and 93/68/EEC	EMC Directive	EN 55022-B	RF Emissions control
	EMC Directive	EN 500082-1,1992	Immunity to Electromagnetic Disturbances
73/23/EEC modified by 93/68/EEC	Low voltage Directive	EN 60950	Product safety

FC

Model: K 500 Optima conforms to the following specification:
FCC Part 15, Subpart A, Section 15.107(a) and Section 15.109(a) Class A digital device

Supplemental Information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note:

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmfull interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INTRODUCTION

Thank you for choosing the CIM K 500 Optima Plastic Card Printer.

CIM's P series card printers offer a low cost, high quality solution to those requiring computer-controlled printing and encoding of credit card style plastic cards, Card applications include personalized identification, access control, visitor, membership, badges and tags.

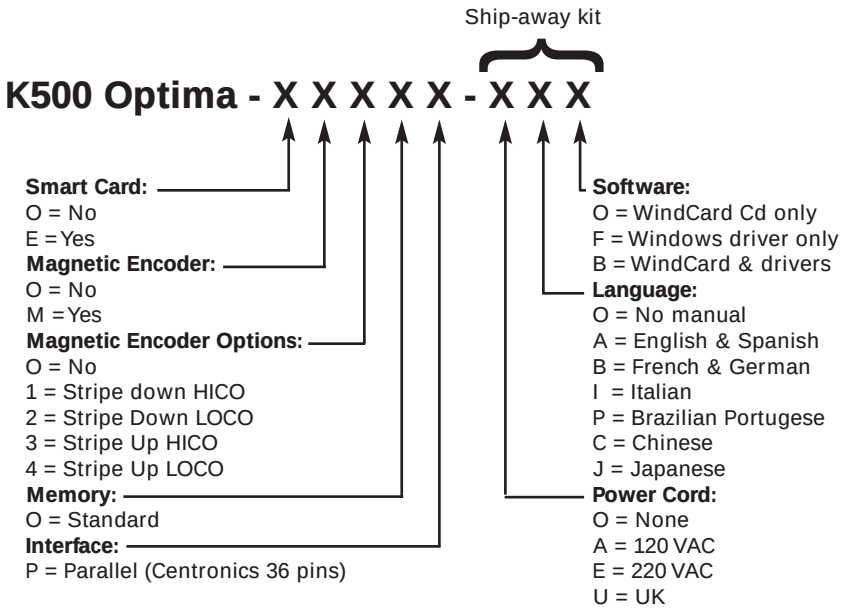
This manual guides you to efficient start up and operation of your new Card Printer.

K 500 Optima PRINTER MODELS

The CIM Product Number tells a story:

Here is a quick review of the CIM Card Printer Series numbering and lettering system to help you.

The K 500 Optima Plastic Card Printer employs Dye Sublimation and Resin Thermal Transfer technologies. Model numbers include identifiers that specify options are shown using the following lettering conventions:



ICONS

Throughout this manual, different icons highlight important information, as follows:

Important general information.

Mechanical hazard, such as one associated with moving parts, capable of resulting in equipment damage or personal injury.

Electrical hazard, such as an exposed voltage point, capable of causing electrical shock and personal injury.

An area where electrostatic discharge (ESD) can cause component damage. Use a grounding wrist band.

Elevated temperature hazard, capable of producing a burn.

Keep Card Printer clean by minimizing cover open time.

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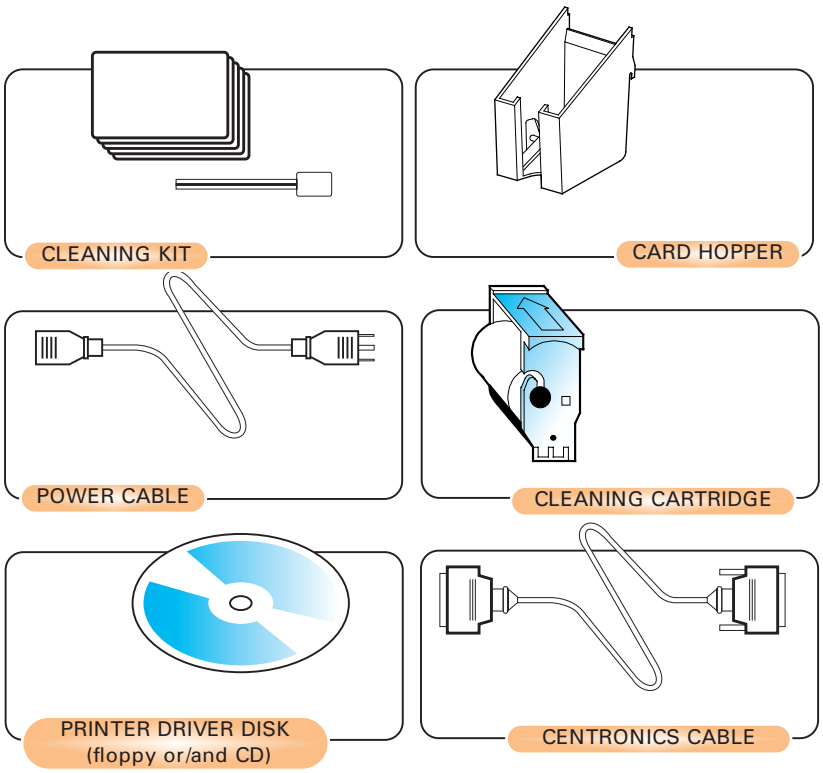
1 GETTING STARTED

1 • 1 Unpacking your card printer

Your K 500 Optima printer ships in a carton and protective anti-static bag. Keep all packaging material in case you need to move or re-ship the printer.
While unpacking, inspect the carton to ensure that no damage occured during shipping.
Please ensure that you have a clean and nearly dust free environment for proper operation and storage of the printer.

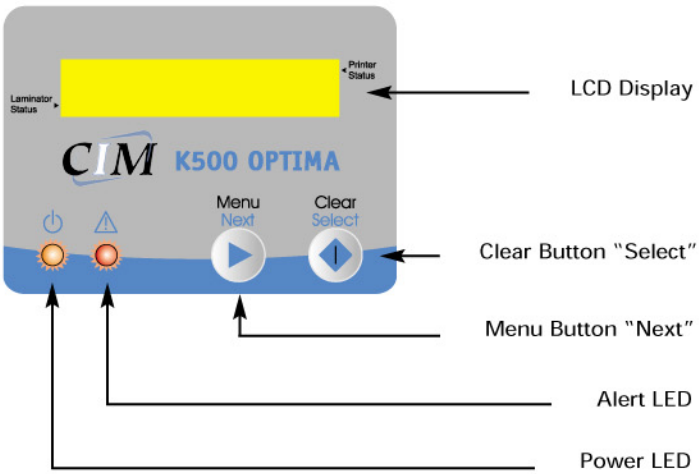
In addition to user documentation, make sure the following items are included with your K 500 Optima printer:



If any items are missing, please contact your dealer.

1 • 2 Indicators and Control

Your K 500 Optima printer has an LCD Display, two LED's and two Panel Buttons.



LCD Display:

The 16 character LCD Display is used for:
• Showing the printer's current status
• Providing operator and service messages (chapter 5)

LEDs:

The two LEDs are used for:
• Green: Power LED
• Amber: Alert LED (with Beeper)

Panel Buttons:

The Menu Button (left) is a push button used for:
• Bringing printer into Menu Mode when pressed with the printer showing READY on the LCD Display.
• Using in Menu Mode to scroll through Menu Options.

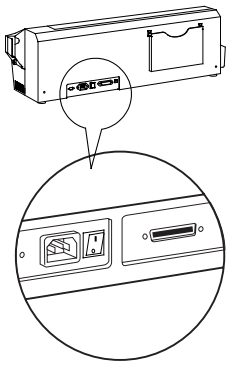
The Clear Button (right) is a push button used for:
• Clearing an error status (when LCD Display shows an error and Alert LED is on).
• Invoking automatic retry of the operation which gave the error.
• Selecting a Menu Option when in Menu Mode.

Note: The buttons beep when pressed.

1 • 3 Printer Installation

The following will guide you through the installation of your K 500 Optima printer.

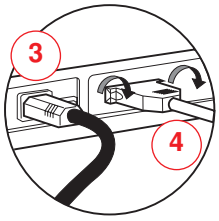
CAUTION: Limit AC power supplied to the K 500 Optima Printer to 110 - 230 V AC, 60 - 50 Hz for an associated 1,40A - 0,80A. Limit excess current draw to 16 amps or less, using an associated circuit breaker or other such device. Never operate the printer in a location where operator, computer, or printer can get wet. Personal injury could result. The printer must be connected to an earthed electrical power supply and properly protected against electrical surges and grounding faults.



1 • Place the printer in a location that allows easy access to all sides. The printer should never be operated while resting on its side or upside down.

2 • Place the printer's power switch in the OFF (O) position.

3 • Insert the power cable to the printer power socket and attach to grounded electrical socket of the proper voltage and type.



4 • Attach interface cable to printer and computer and then secure.

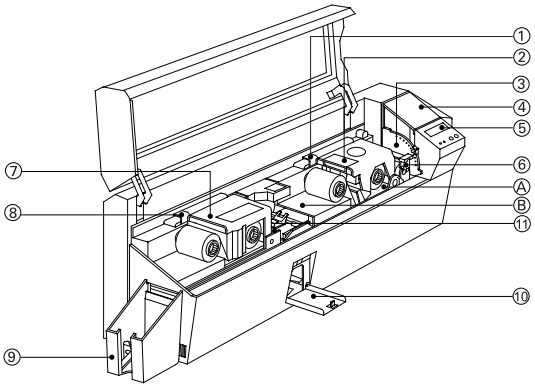
5 • Switch power on.

CAUTION: Intermittent or unpredictable operation may occur from unsecured connectors. If damaged, the power cable must be replaced by an exact equivalent.
Use only Parallel Cable under 3 Meters in length.

2 OPERATION

2 • 1 Printer Features

The following shows the features found on your K 500 Optima Printer:



Standard Features:

1 • Print Head Unlock Lever
2 • Print Head
3 • Card Thickness Control Lever
4 • Card Feeder
5 • LCD Display and two panel Buttons
6 • Card Cleaning Cartridge
7 • Laminator
8 • Laminator Unlock Lever
9 • Card Output Hopper
10 • Rejected Card Box
11 • Cleaning Roller

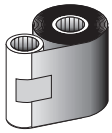
Optional Features:

A • Smart Card Contact Station
B • Magnetic Encoder Station

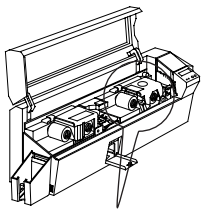
2 • 2 Loading Printing Ribbons

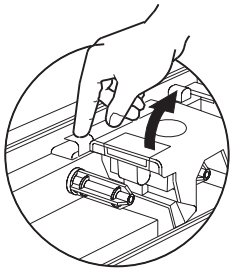
The K 500 Optima Printer requires approved ribbons. The Resin Thermal Transfer and Dye Sublimation ribbons and Lamination are specifically designedfor your K 500 Optima Printer. For optimum performance and printer life (Print Head), always use approved ribbons.

DO NOT TOUCH the print head or the electronic components on the print head carriage. Discharges ofelectrostatic charge from the human body or other surfaces can damage the print head or other electronic components used in this device.

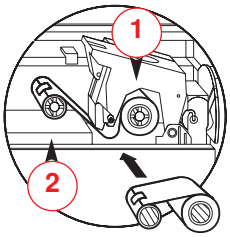


1 • Remove ribbon from packaging.

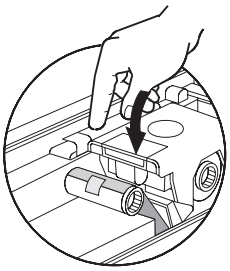




2 • With printer power ON and Printer Ready status, open cover and press down on the Print Head Unlock Lever to open the print head carriage. The print head carriage will pop open.



3 • Load ribbon onto the supply spindle "1" (under print head carriage) and empty core (with tape attached) onto the take-up spindle "2". Make sure the ribbon comes off the top of the supply spindle and feeds to the top of the take-up spindle.



4 • Push down on the Print Head Lock Lever until an audible "click" signals the locked-down position.

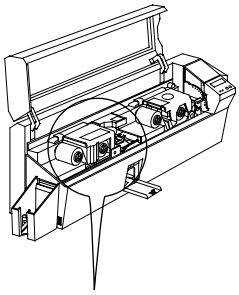
5 • Close Cover

Please note that the ribbon automatically synchronises whenever the print head lock down occurs.

The card flipper will not operate and an error will be indicated if you try to flip a card when the cover is open.

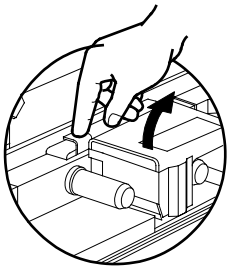
2 • 3 Loading Lamination Patch

The K 500 Optima Printer requires approved patches.
Clear patches, hologram patches or Overlay varnishes are specifically designed for your K 500 Optima Printer. For optimum performance and printer life (Laminator), always use approved patches.

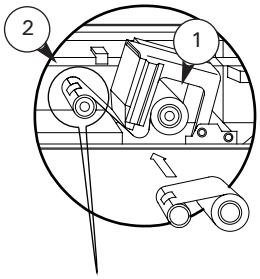


1 • Remove patch from packaging.

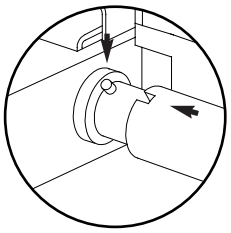
2 • With printer power ON and printer Ready status, open cover.



3 • Press down on the Laminator Unlock Lever to open the laminator bracket. The laminator bracket will pop open.



4 • Load patch onto the supply spindle "1" (under laminator bracket) and align the notch of the empty core with the spindle screw (with tape attached) onto the take-up spindle "2" .
Make sure the patch comes off the top of the supply spindle and feeds to the top of the take-up spindle.



5 • Push down on the Laminator Lock Lever until an audible "click" signals the locked-down position.

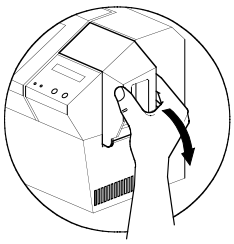
6 • Close Cover

.Please note that the ribbon automatically synchronises whenever the laminator head lock down occurs.

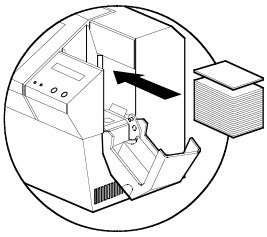
2 • 4 Loading Cards

To help you load, print, and collect cards, the K 500 Optima has the following items:

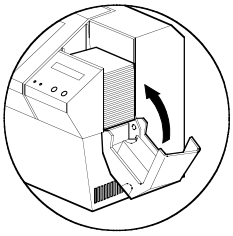
A - **CARD FEEDER**
This items is used for loading cards.



1 • Open Card Feeder Cover by putting your fingers on both sides and rotating the cover in a clockwise direction to the open position.



2 • Install cards into Feeder* as shown.

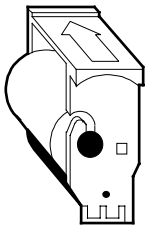


3 • Close Card Feeder Cover.

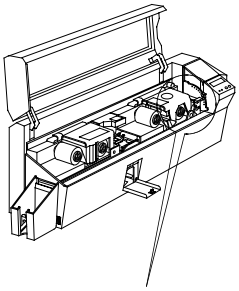
DO NOT bend cards or touch print surfaces as this can reduce print quality. The surface of the cards must remain clean and dust free. Always store cards in an enclosed container. Ideally, use cards as soon as possible. If cards stick together, carefully shuffle them.

* See Chapter 6, Technical Specifications, for card requirements and capacities.

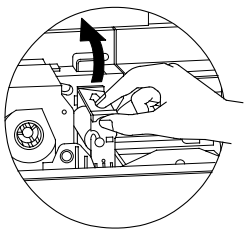
B - **INSTALL CARD CLEANING CARTRIDGE**
This items is used to clean the cards entering the printer.
It must installed before using the printer.



1 • Remove Card Cleaning Cartridge from plastic bag and peel off protective wrapper from adhesive cleaning roller.

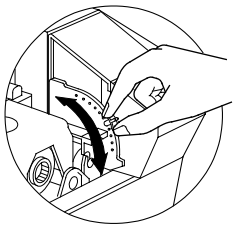


2 • Open printer cover and remove the yellow reminder tape from the location for the Cleaning Cartridge.



3 • Make sure the arrow on top of the assembly is facing towards the rear of the printer.
Hook assembly into slot on printer and rotate down.
Ensure the assembly locks in place.

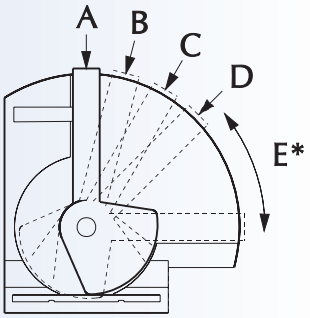
C - **CARD THICKNESS CONTROL LEVER**
This items is operated by the user to prevent more than one card feeding into the printer at the same time and causing a jam.



Open cover, and adjust lever to the correct position for the card thickness you are using. Repeat for different card thickness. (Factory setting is for 30 mil (0,762 mm) card thickness). See diagram below:

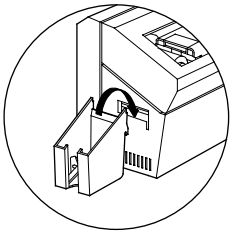
Card thickness:
A - 60mil (1.524mm) to 50mil (1.27mm)
B - 40mil (1.016mm)
C - 30mil (0.762mm)
D - 20mil (0.508mm)
E* - Less than 20mil (0.508mm)
*Start at lowest position and move lever up to match card thickness.

For other card thickness, start lever at lowest position and move up until cards feed.



Note: For Lamination cards should only be 30 mil cards, and composite PVC is prefered

D - **CARD OUTPUT HOPPER**
This items is used for printing cards.



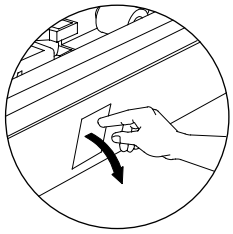
Install card Output hopper onto printer by hooking over bottom edge of card exit aperture.

2 • 5 Rejected Card Box

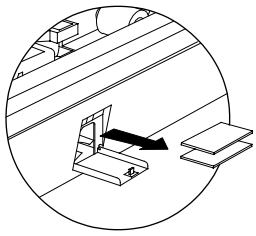
The K 500 Optima Printer is equipped with a Rejected card Box. When an encoding cannot be completed, the card is ejected into the Rejected Card Box. The K 500 Optima Printer counts the number of cards which go into the Reject Card Box. After 20 cards the printer stops, the Amber LED Flashes and a LCD Message is displayed indicating the need to empty the reject box.

REJECT BOX FULL

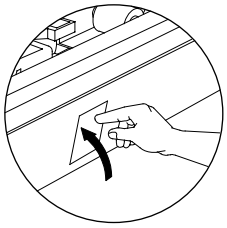
WHEN TO MAINTAIN
When the LCD screen reports message



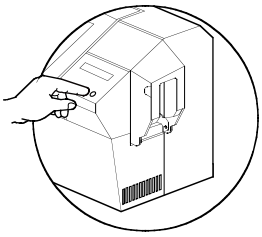
HOW TO MAINTAIN
1 • Press the top of the Rejected Card Box Door as shown. Allow the door to swing down and open.



2 • Remove all cards from the Rejected Card Box.



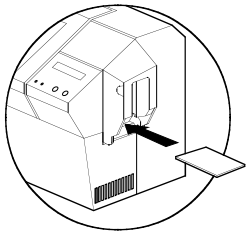
3 • Swing the Rejected Card Box Door and press the top. An audible “click” signals the locked position.



4 • Press the Clear Button on the front panel to re-start the current printer job and to clear the rejected cards counter.

2 • 6 Feeding one card at a time

A Manual Feed Slot is avalable on the side of the Card Feeder cover for feeding single cards. Cleaning Cards are fed manually through this slot.
The Feeder must be empty for manual card feeding to work properly.

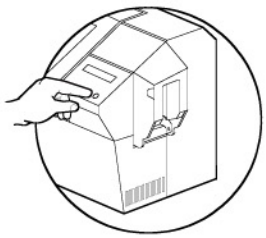


For one-at-a-time printing, feed cards through slot on side of Feeder.

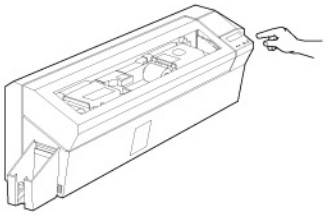
Do not feed more than one card at a time.

2 • 7 Printing a Test Card

With ribbon and cards loaded, your K 500 Optima printer is ready to print.
To check the operation of the printer and the laminator you should print a test card.



1 • When the printer displays READY, press the "Next" button (left) on your Control Panel to MENU PRINTER, then the "Select"button (right) to PRINTER INFO.

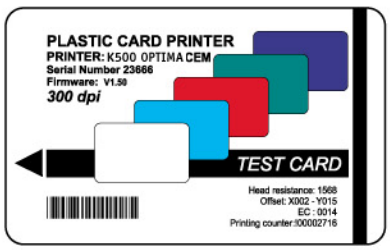


2 • Press twice the "Next" button to SELF TEST MENU and then "Select" to TEST PATTERN.

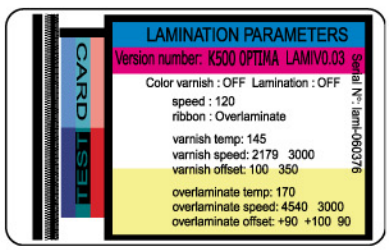
3 • A test card will print after a few seconds. LCD display will show printing status. Test Card is printed on both sides of the card.

This is an example of the test card.

Front Side: **Printer Operation**



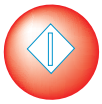
Back Side: **Laminator Operation**



2 • 8 Printer Menu Information

The printer is equipped with an LCD Display and two key buttons which gives access to printer menus.
When the printer status shows READY, press the Menu button to enter the Menu Mode

Menu Button “NEXT”(left)



Clear Button “SELECT”(right)

When you are in Menu Mode the top line display shows menu information and the second line of display clarifies the function of the two “NEXT” and “SELECT” key buttons relative to the current menu item. The printer will return to READY Mode if either of the two key Buttons is not pressed within ten seconds of entering Menu mode.

PRINTING STATION:

- PRINTER INFO
- CLEANING MENU
- SELF TEST MENU
- PRINTER DEFAULTS

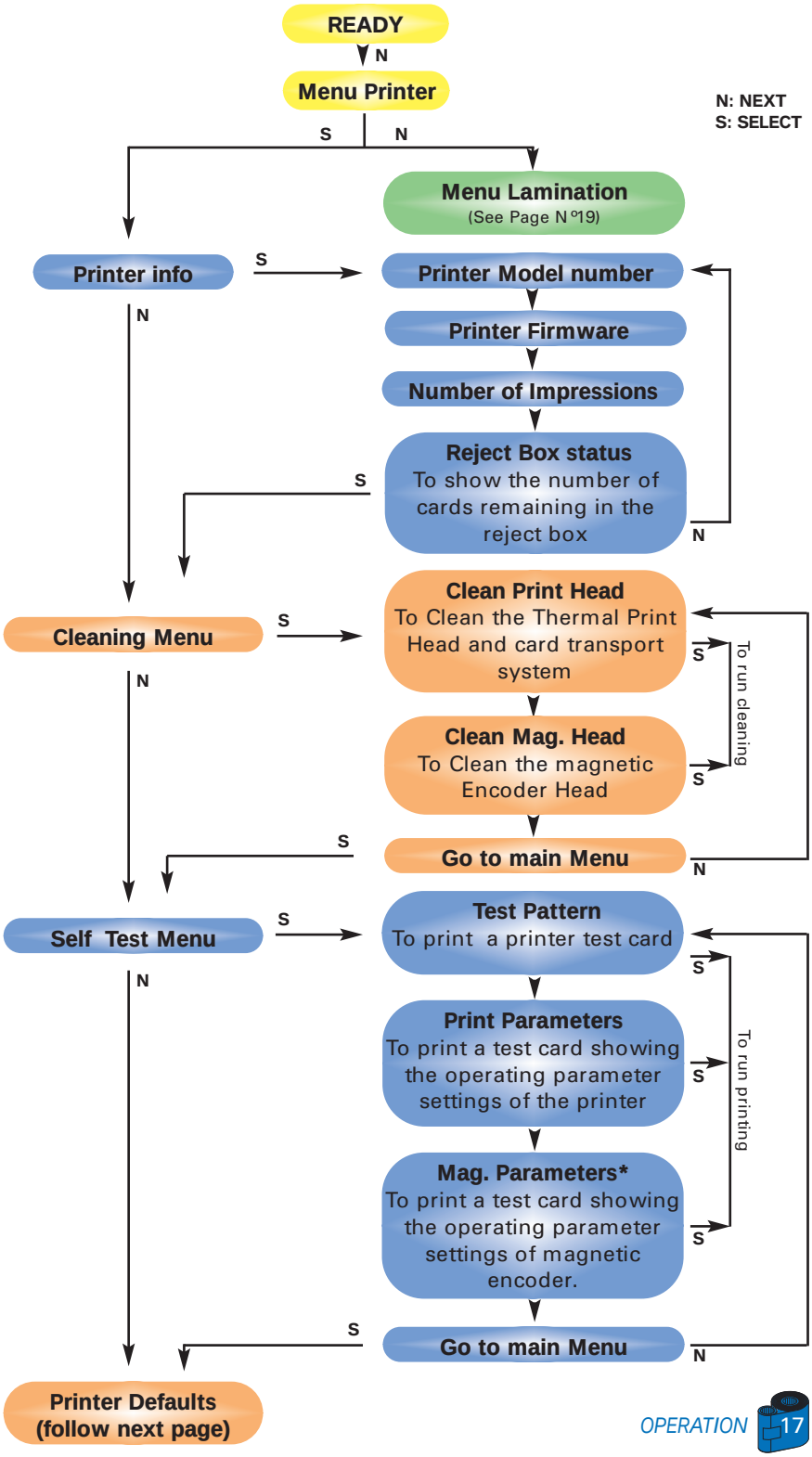
LAMINATOR STATION:

- LAMINATOR INFO
- SELF TEST MENU
- LAM DEFAULTS

See next page:

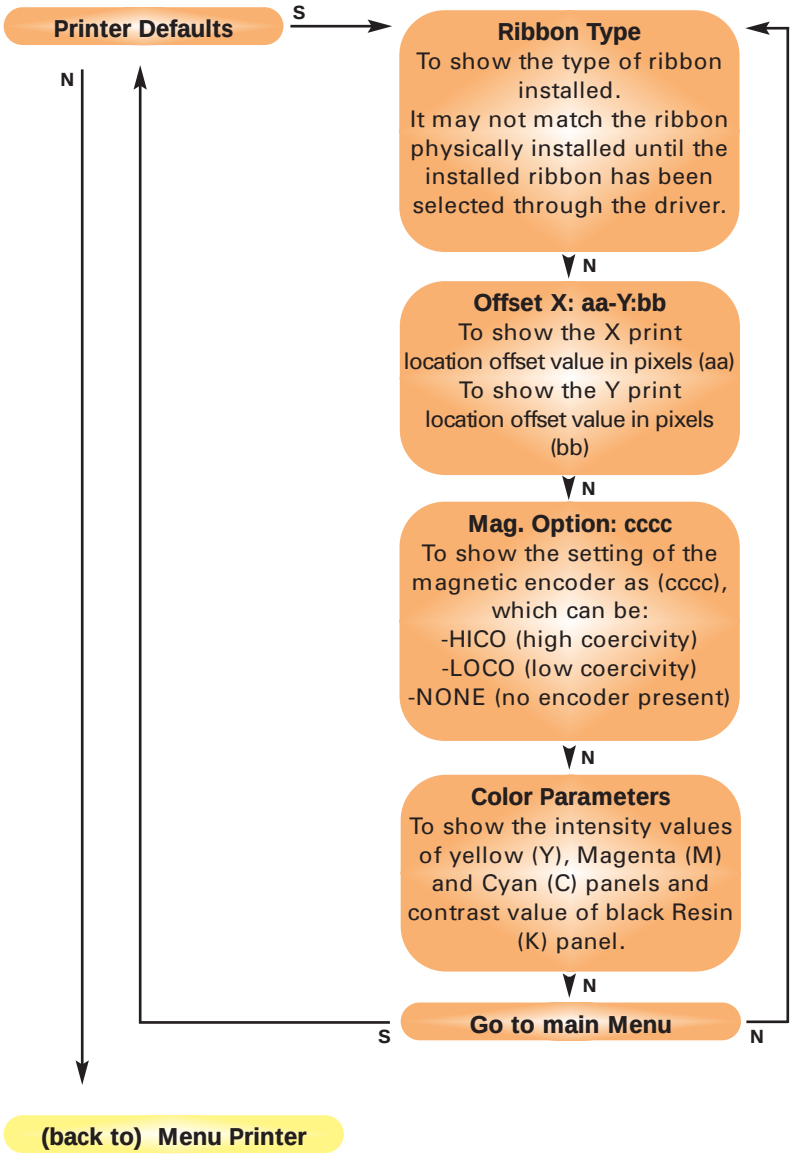
K 500 Optima LCD Menu Tree: Printing Station

*If the printer is equipped with a Magnetic Stripe Encoder

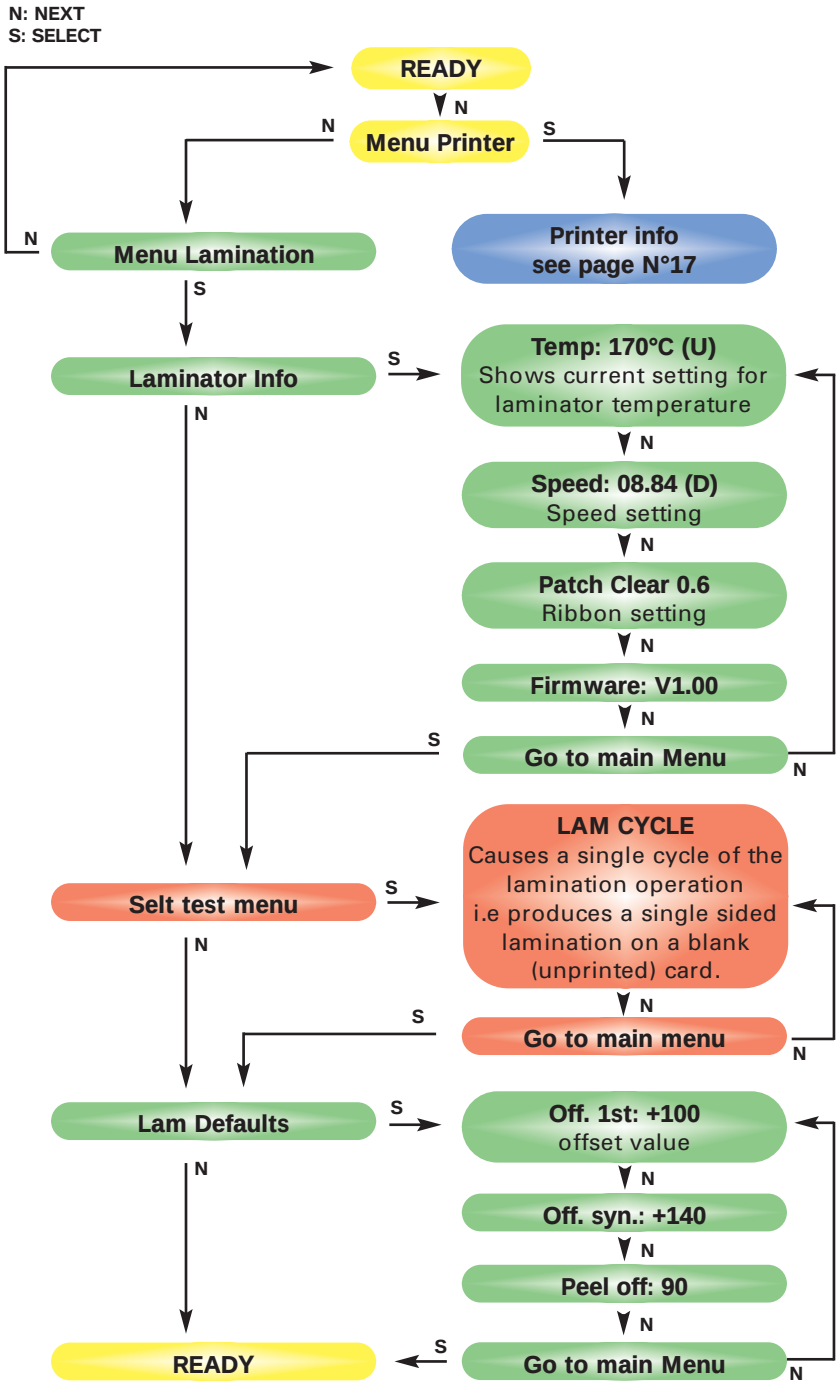

READY
N
Menu Printer
N: NEXT
S: SELECT
S
N
Menu Lamination
(See Page N°19)
Printer info
S
Printer Model number
N
Printer Firmware
Number of Impressions
Reject Box status
To show the number of cards remaining in the reject box
S
N
Clean Print Head
To Clean the Thermal Print Head and card transport system
Cleaning Menu
S
N
S
To run cleaning
Clean Mag. Head
To Clean the magnetic Encoder Head
S
Go to main Menu
S
N
Test Pattern
To print a printer test card
Self Test Menu
S
N
S
Print Parameters
To print a test card showing the operating parameter settings of the printer
S
To run printing
Mag. Parameters*
To print a test card showing the operating parameter settings of magnetic encoder.
S
S
Go to main Menu
N
Printer Defaults
(follow next page)

Menu Tree: Printing station (continuation)

N: NEXT
S: SELECT


Printer Defaults
S
N
Ribbon Type
To show the type of ribbon installed.
It may not match the ribbon physically installed until the installed ribbon has been selected through the driver.
N
Offset X: aa-Y:bb
To show the X print location offset value in pixels (aa)
To show the Y print location offset value in pixels (bb)
N
Mag. Option: cccc
To show the setting of the magnetic encoder as (cccc), which can be:
-HICO (high coercivity)
-LOCO (low coercivity)
-NONE (no encoder present)
N
Color Parameters
To show the intensity values of yellow (Y), Magenta (M) and Cyan (C) panels and contrast value of black Resin (K) panel.
N
Go to main Menu
S
N
(back to) Menu Printer

Menu Tree: Lamination station



3 PRINTING A SAMPLE CARD

Printing with the K 500 Optima Printer requires the Windows Printer Driver, your card design/issuing software or printer command level programming through the printer interface.

The K 500 Optima Card Printer can be used with any Windows 95/98 or Windows NT 4.0 software application program, using the drivers provided with the printer.

This section contains information on the printing of a dual-sided card in color (using the 6-Panel color ribbon YMCKOK) and the Windows Printer Driver.

BEFORE installing updated printer driver versions, always delete the existing printer driver version from your computer.

3 i1 To install the K 500 Optima Printer Driver in windows 95/98, use the following steps:

IMPORTANT NOTE: Ensure that your PC printer port is set to standard mode and also ensure that you have deleted any previous versions ot this printer driver. If you have any doubts please contact your IT department.

This installation uses floppy drive “A” or from CD Rom as the installation drive with the printer used as stand alone.

❒ Start your computer and then Windows.

❒ Insert your “CIM Software” diskette into the drive “A” or CD drive.

❒ Under windows click the **Start** button, select **Settings**, then **Printers**.

❒ Double click on the **Add Printer icon** and also Next.

❒ Ensure **Local Printer** is selected and click on Next.

❒ Click on **Have disk** and then type in “**A:\win95**” if using the floppy disc or“**D:\win95**” if using the CD and click OK.

❒ K 500 Optima CARD PRINTER should be displayed after which click on Next.

❒ Choose **LPT1: Standard Printer Port**, click on **Next**, select **Yes** to set as **Default Printer** and click on **Finish** to install.

The Printer wizard will copy the necessary files to the PC for you and the K 500 Optima printer driver installation will be completed.

3 • 2 To install the K 500 Optima Printer Driver windows 2000/NT4.0:

Ensure that you have administrative privileges to perform this installation or contact your IT department.

Set printer as Not Shared for stand alone use.

To install the printer drives follow instructons on the Rainbow CD-ROM

Once the printer driver has been successfully installed, you will need to configure it for your printer. This driver provides control of several printer features when printing from Windows applications. These features are accessed through the K 500 Optima Plastic Card Printer Properties. To access these properties select the K 500 Optima Printer icon in Printers. Then click File Menu and select Properties.

3 • 3 Set Printer Driver Options:

The K 500 Optima Printer screen appears. Change the options as follows:

❒ On the **Printer** tab configure the magnetic encoder feature. If your Printer is equipped with a Magnetic Encoder option, select **With Magnetic Encoder** option.

❒ On the **Card** tab select card orientation:
Landscape or portrait - Select **"Landscape".**

❒ On the **Ribbon** tab, select the Ribbon Type. Select **YMCKOK** for the standard 6-panel ribbon.

❒ In the same tab, go to Black Panel area and select Text Only. this option allows the text printing using the Black Resin Panel from the Color Ribbon.

❒ Close the CIM K 500 Optima Printer Properties screen.

Now that you have loaded media and set up the printer driver, the K 500 Optima Printer is ready to print.

3 • 4 Printing a sample card:

Follow the steps to print your first card

❒ Go to the Microsoft Word Software.

❒ If the printer was not selected as the default printer, go to the **file** menu and Select **Printer** and choose **CIM K 500 Optima Card Printer** in the printer names list. Then Close the print dialog box.

❒ Come back to **file** menu and choose **Page Setup.**

❒ Select **Paper Size** tab and in **Paper Size** choose **Card**. Then select the orientation: "landscape".

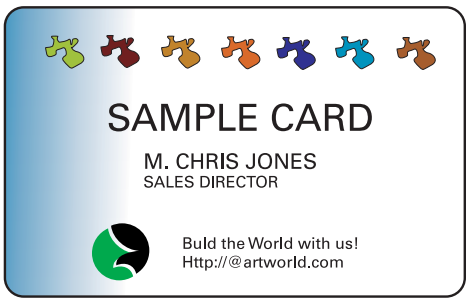
❒ Go to **Margins** tab, Set the Top, Bottom, left and right margins to O (zero) values.

❒ Press **OK** to close Page Setup window.

❒ The card appears on the screen.

❒ Design a card with 2 sides as follows:

Front Side:



Back Side:

❒ Once you are ready to print, go to **File** and point **Print**

❒ The printer will feed in a card and start printing (the data download time will vary depending on the complexity of the card design and the processing speed of the computer).

❒ Once the printing job is achieved the card is ejected from the printer.

4 CLEANING

PROTECT YOUR FACTORY WARRANTY!

The recommended maintenance procedures must be performed to maintain your factory warranty.

Other than the recommanded cleaning procedures described in this manual, allow only CIM S.p.A. authorised technicians to service the K 500 Optima Printer.

NEVER loosen, tighten, adjust, or bend, etc. a part or cable inside the printer.

NEVER use a high pressure air compressor to remove particles in the printer.

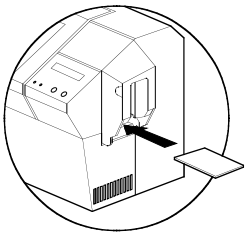
4 • 1 Cleaning System

Your K 500 Optima Printer includes a simple cleaning system using the Pre-Satured Cleaning Cards provided. The regular use of these cards will clean and maintain important parts of your printer that cannot be reached: including the Print Head, the Lamination station and Transport Rollers.

CLEAN PRINTER

WHEN TO CLEAN
When the LCD screen reports messages.

HOW TO CLEAN
1 • Leave power on.
Open Cover and release Print Head Bracket to remove ribbon.
Close Print Head Bracket
Close Cover. Remove cards from Card Feeder.



2 • Insert one Pre-Saturated Cleaning Card (provided) through slot on the side of the Card feeder Cover.

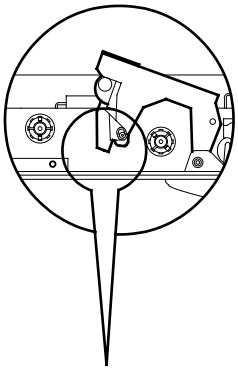
3 • Press the right panel button for a few seconds. The card will feed into printer and carry out the cleaning process. repeat the process with a new Cleaning card if necessary.

Note: For a printer cleaning prior to the WHEN TO CLEAN signal, press the Left Panel button until the LCD screen shows "CLEANING MENU". Press the right Panel button to select and one more time again to run the cleaning process (Repeat first steps 1 & 2 above).

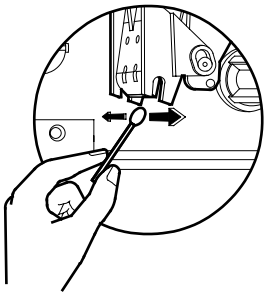
Although the CLEAN PRINTER message is displayed until the cleaning process has been performed, the printer will continue to operate.

4 • 2 Cleaning the Print Head

A cleaning using the cleaning system with cards usually suffices. However, a separate Print head cleaning using swabs can remove more stubborn deposits when print anomalies persist. To avoid deposits, only use foam-tipped swabs.



1 • Switch power Off, open cover, raise Print Head and remove the Ribbon.



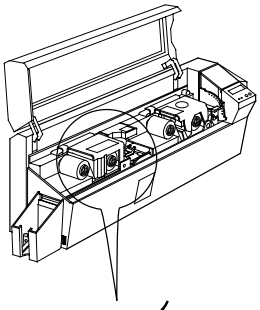
2 • Clean Print Head by moving alcohol-moistened swab tip side-to-side across Print Head elements. Only use moderate force.
Make sure the elements are dry before switching on.

Never use a sharp object to scrape deposits from the print head. Permanent damage will result.

4 • 3 Cleaning the Laminator Rollers

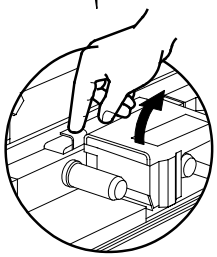
A cleaning using the Cleaning System with cards usually suffices, moreover your printer is equipped with two cleaning rollers situated before the card enters the Laminator. The upper roller has a coating that collects any loose particles on the surface of cards. However, a separate Laminator Station cleaning can remove more stubborn deposits.

To avoid deposits, only use foam-tipped swabs.
Never touch the rollers with fingers.



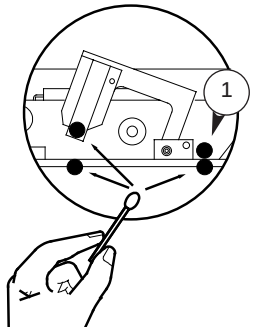
WHEN TO MAINTAIN
Cleaning frequency varies with different environments. Clean when lamination anomalies persist.

HOW TO MAINTAIN



1 • Switch OFF your printer and open cover. Make sure the Laminator rollers cool down.

2 • Press down on the unlock lever to open the Laminator braquet.



3 • Clean the two Laminator rollers and the two transport rollers gently with a swab.
(The above transport roller “1” can be temporary removed for an easy clean)

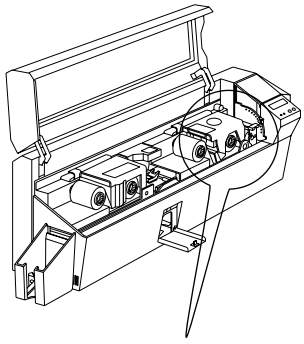
4 • Make sure the rollers are dry before Pushing down the braquet and switching on your printer.

4 • 4 Card Cleaning Cartridge

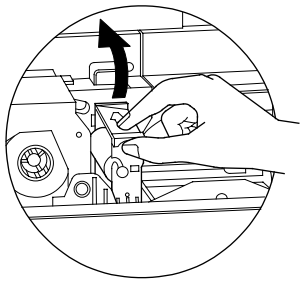
Your K 500 Optima Printer also has a Card Cleaning Cartridge. This item cleans the cards entering the printer. To ensure print quality, the cleaning roller requires periodic replacements.

CLEAN PRINTER

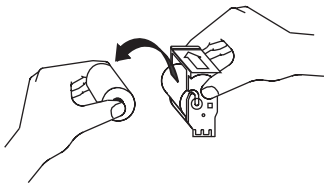
WHEN TO MAINTAIN
When LCD screen reports message.
Run a printer cleaning first.
(see 4.1 Cleaning System for more instructions).



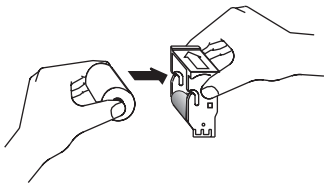
HOW TO MAINTAIN
1 • Open Cover and locate Cleaning Cartridge



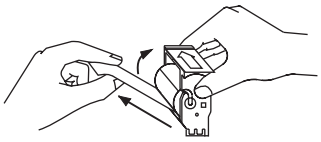
2 • Gently remove Cleaning Cartridge by rotating up and away from printer.



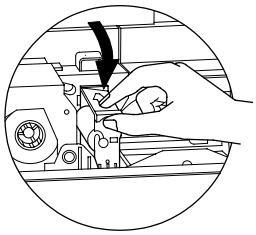
3 • Remove Cleaning Roller from Cartridge and discard.



4 • Install new Cleaning Roller into Cartridge. To avoid contamination, always hold the Cleaning Roller assembly by the ends.



5 • Carefully peel off wrapper from new Cleaning Roller while in Cartridge.



6 • Replace Cartridge into printer. Make sure the arrow on top of the assembly is facing towards the rear of the printer. Hook assembly into slot on printer and rotate down. Ensure the assembly locks in place.
DO NOT touch the roller surface that contacts the cards.

7 • Close Cover

Although the CLEANING PRINTER message is displayed until maintenance has been performed, the printer will cotinue to operate.

5 TROUBLESHOOTING

This section offers solutions to potential problems you may experience with your K 500 Optima printer. The table below lists the screen messages that will be displayed on the printer's LCD, both during normal operation and to alert operator of any error conditions. There is also some additional information dealing with quality issues concerning printing onto cards.

5 • 1 Interpreting LCD Display messages

A • About the Printing Station

SCREEN MESSAGE	MEANING	ACTION
INITIALIZING	The printer is performing an internal test before use	Wait for the ready message
READY	Ready for use	
WAIT TEMPERATURE	Print Head cool down mode	
SELF TEST	Self test card printing	Wait for card printing to start
DOWNLOADING DATA	The card data is being transmitted	
PRINTING YELLOW	The yellow panel is being printed	
PRINTING MAGENTA	The magenta panel is being printed	
PRINTING CYAN	The cyan panel is being printed	

SCREEN MESSAGE	MEANING	ACTION
PRINTING BLACK	A monochrome panel is being printed	
PRINTING VARNISH	The overlay is printing	
PRINT HOLOGRAM	A hologram overlay is printing	
CLEAN PRINTER	The printer is prompting operator maintenance	Carry out the cleaning procedure as detailed in section 4 of this manual
CLEAN MAG HEAD	The printer is prompting operator	Carry out the cleaning procedure as detailed in Appendix A of this manual
CLEANING	The printer is performing an internal cleaning routine	
REMOVE RIBBON	The ribbon has not been removed while the cleaning operation is in progress	Remove ribbon
OUT OF RIBBON	The printer ribbon has run out	Replace printer ribbon
MECHANICAL ERROR	The printer has an error moving the card internally	Remove the jamed card. Ensure the card is not out of specification
OUT OF CARD	The card feeder is empty	Add more cards or adjust the card feeder to accept the cards
ROTATION ERROR	The printer has an error moving the card in the flip	Remove card
COVER OPEN	The cover is open	Close the cover
HEAD OPEN	The print head is not locked into position	Lock the print head in its lower position
COMMAND ERROR	The data being sent from the host is not recognised	Check that the data is suitable for printing. Try reprinting a card from known “good” data
PARAMETERS ERROR	The features of the card are not recognised	Check the windows driver options and printer type
ENCODING ERROR	Data cannot be written or read from the card’s magnetic stripe Data cannot be read from the card’s magnetic stripe The reject box is full The printer cannot detect a magnetic stripe on the card	Check that the cards are loaded with the magnetic stripe in the correct orientation. Check whether high or low coercivity cards have been specified. Check that the data conforms to ISO specifications. See Appendix A of this manual for further information.

SCREEN MESSAGE	MEANING	ACTION
READING ERROR	Data cannot be read from the card's magnetic stripe	Check that the cards are loaded with the magnetic stripe in the correct orientation. Check whether high or low coercivity cards have been specified. Check that the data conforms to ISO specifications. See Appendix A of this manual for further information.
REJECT BOX FULL	The reject box is full	Empty the reject card box and press the right panel button
MAGNETIC ERROR	The printer cannot detect a magnetic stripe on the card	Check the card orientation
FLASH ERROR		Contact your dealer for technical support
NO ACCESS		

Ribbon Errors: Check that the print ribbon has not "run out". Lock and then unlock the print head assembly; this resynchronises the ribbon automatically. When using a color ribbon, it should advance automatically so that the leading edge of the yellow panel is beneath the print head. Ensure that the correct ribbon type has been specified in the Windows driver.

Card Feed & Mechanical Errors: Ensure that the card thickness adjustment has been set-up correctly to allow one card to feed.

Magnetic Encoding Errors: Check that the cards are inserted correctly in the printer. Ensure that the cards are low or high coercivity as required, and are set-up correctly in the printer driver.

Cleaning Alert: The printer has counted the number of cards printed and has automatically flagged that a cleaning routine needs to be carried out. (See Chapter 4).

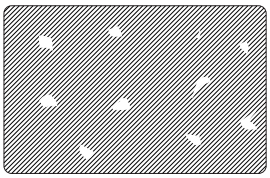
B • About the Laminator Station

SCREEN MESSAGE	MEANING	ACTION
INITIALISING	The printer is performing an internal test before use	Wait for the ready message
READY	Ready for use	
COVER OPEN	The cover is open	Close cover
ROTATION ERROR	The printer has an error moving the card in the flip	Remove card
LAMINATING	The printer is processing a lamination	Wait for the laminated card
OUT OF RIBBON	The printer ribbon has run out	Load a new ribbon
MECHANICAL ERR	the printer has an error moving the card internally	Remove the jamed card. Ensure the card is not out of specification.
TEMPERATURE ERR	The printer has detected a temperature error	Proceed an initialization by switching Off and On.
WARMING UP	A lamination command has been sent and the temperature has not reached +/- 7°C of the recommended temp.	Wait until the printer has reached the recommended temperature
RIBBON FAILURE	The film is glud to the card during the cool down period.	Open laminator bracket. Remove card. Close laminator bracket.
STANDBY MODE	Laminator power reduced.	

5 • 2 Print Quality Issues

This section will help you resolve print quality problems. The print quality is dependent on several factors. The two most important factors that will increase your print quality are cleanliness and card stock. To diagnose and fix print quality problems, follow the troubleshooting procedure below:

• Small spots appear on the printed card with a non-printed area or a different color.



Possible Cause

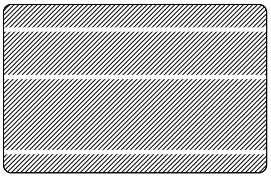
A • Contamination on the card surface.
B • Dust inside the printer and/or dirty Cleaning Roller.

>> **Solution**

A1 • Check that cards are stored in a dust free environment
A2 • Use a different supply of cards.

B1 • Perform a Cleaning of the printer (see Cleaning section).
B2 • Replace Cleaning Roller (see Cleaning section)

• There are non-printing horizontal lines (white) on the card surfaces.



Possible Cause

A • Ribbon is not correctly positioned.
B • Print Head may be dirty.
C • Print Head elements may have been damaged (e.g. scratched or burnt).

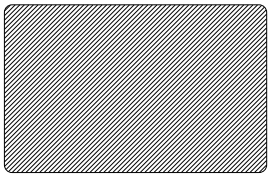
>> **Solution**

A1 • Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
A2 • Check that the ribbon is properly rolled onto the ribbon cores and there are no wrinkles in the ribbon.
A3 • Push down on the Lock Lever until an audible “click” signals the locked-down position.
A4 • Ribbon will automatically synchronize.
A5 • Print again.

B1 • Perform a Cleaning of the Print Head (see 4 • 2 Cleaning the Print Head).

C1 • Call service for Print Head replacement information.

• Printing shows very pale or inconsistent results.



Possible Cause

A • Ribbon have been stored improperly or is damaged.
B • Cards may not meet specifications.
C • Contrast and/or Intensity may be set to values which are too high.
D • Dust or embedded contamination on elements of the Print Head.

>> **Solution**

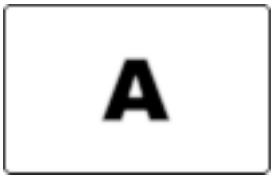
A1 • Change ribbon and print again.

B1 • Use a different supply of cards.

C1 • Adjust Contrast and/or Intensity values in software.

D1 • Perform a Cleaning of the Print Head (see 4 • 2 Cleaning the Print Head).

• Printing shows blurry printed image.



Possible Cause

A • Ribbon may not be correctly positioned.
B • Ribbon may not synchronized on the correct color panel position.
C • Cards may not meet specifications.
D • Dust inside the printer and/or dirty Cleaning Roller.

>> **Solution**

A1 • Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
A2 • Check that the ribbon is properly rolled onto the ribbon cores.
A3 • Push down on the Print Head Lock Lever until an audible “click” signals the locked-down position.
A4 • Ribbon will automatically synchronize.
A5 • Print again.

B1 • Open cover and press down the Print Head Unlock Lever to open the Print Head carriage. The Print Head will move up.
B2 • Push down on the Print Head Lock Lever until an audible “click” signals the locked-down position.
B3 • Ribbon will automatically synchronize.
B4 •Print again.

C1 • Use a different supply of cards.

D1 • Perform a cleaning of the Print Head (See 4 • 2 Cleaning the Print Head).
D2 • Replace Cleaning Roller (See 4 • 3 Cleaning Cartridge).

• No printing on the card.

Possible Cause

A • Ribbon may not be installed in the printer.
B • Cards may not meet specifications.
C • Cable on Print Head may be disconnected.
D • Print Head elements may be scratched or burnt.

>> **Solution**

A1 • Check for ribbon in the printer.

B1 • Use a different supply of cards.

C1 • Power off the printer and check the Print Head cable connections.

D1 • Call Service for Print Head replacement information.

For optimum print quality, always keep cover of the printer closed except during ribbon loading and card thickness control procedures.

The card flipper will not operate and an error will be indicated if you try to flip a card with the cover open.

6 TECHNICAL SPECIFICATIONS

General

- High speed printing & laminating
  YMCK & 1.0 mil lamination 110 cards per hour
  YMCK & 0.6 mil lamination 120 cards per hour
  YMCK-K & 1.0 mil lamination 95 cards per hour
  YMCK-K & 0.6 mil lamination 105 cards per hour
- Small footprint
- Windows Drivers for 95/98/2000 and NT 4.0
- One year printer warranty
- One year print head warranty`

Color Printing

- Color dye sublimation or monochrome thermal transfer printing
- 300 dpi (11.8 dots/mm) print resolution
- Edge to edge printing standard

Bar Code

- Code 39
- Code 128 B & C with & without check digit
- 2 of 5 & 2 of 5 industrial
- UPCA
- EAN8 &EAN13
- PDF 417 2D bar code and other symbologies available via Wincard Classic utility tool (option)

Fonts

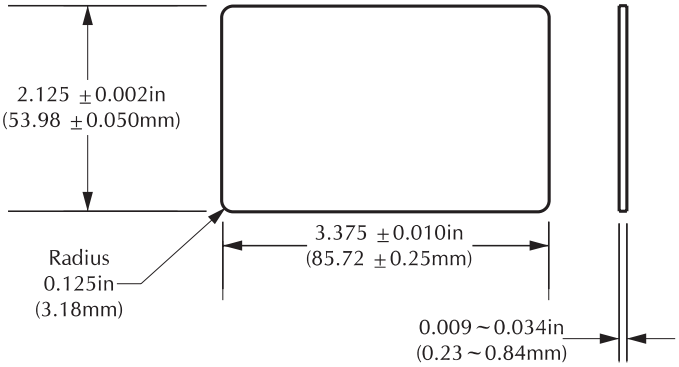
- Resident: Arial Normal 100, Arial Bold 100
- True Type fonts available via Windows Driver

Cards

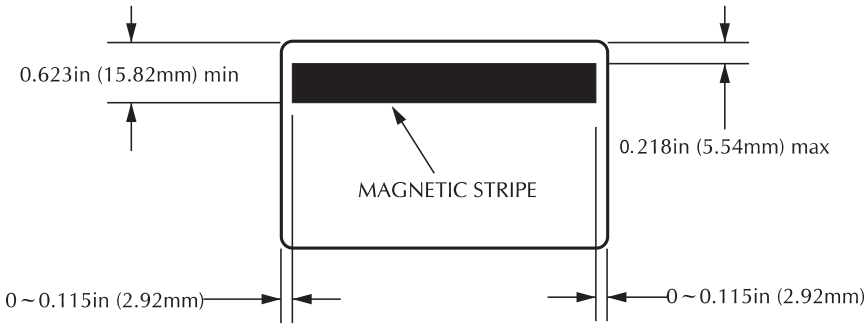
- Types PVC, Composite
- Card width/length: ISO CR-80 - ISO 7810, 2.125” (54mm) by 3.375” (86mm)
- Option: Magnetic Stripe - ISO 7811
- Option: Smart Card - ISO 7816-2
- Card thickness: 10mil (0,25mm) to 50mil (1,25mm) for printing only and 0,8mm for printing and lamination.
- Card Feeder capacity: up to 300 cards (10mil), up to 100 cards (30mil)
- Card Output Hopper capacity: 300 cards (10mil), up to 100 cards (30mil)

CARD DIMENSIONS

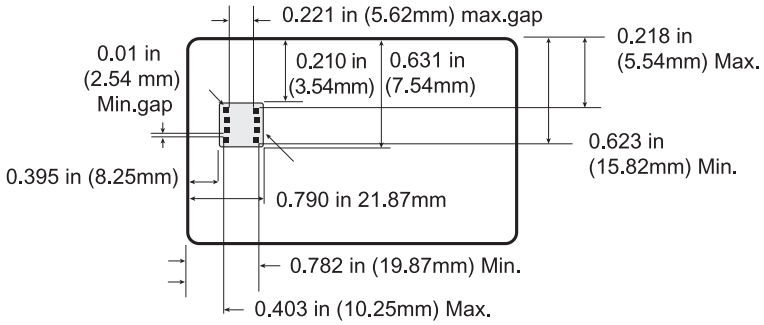
ISO STANDARD DIMENSIONS FOR PLAIN CARD



ISO STANDARD DIMENSIONS FOR MAGNETIC STRIPE CARD



CHIP POSITION FOR SMART CARD



Ribbons

- Monochrome: 1500 cards/roll
- Monochrome colors: back, red, blue, green, yellow, silver, gold, white.
- K-resin + O: 800 cards/roll
- K-dye + O: 800 cards/roll
- YMC: 300 cards/roll
- YMCK: 250 cards/roll
- YMCK-K: 200 cards/roll
- YMCKO: 350 cards/roll
- YMCKOK: 250 cards/roll

Patches

- Clear Patch 1 or 0.6 mil
- Clear Patch for mag. stripe 1 or 0.6 mil
- Clear Patch for smart card 1 or 0.6 mil
- Hologram Pcard Patch 1 or 0.6 mil
- Advantage seal Pcard image Patch 1 mil
- Hologram Pcard full overlay
- Varnish full overlay

Overlay Varnish

- Thermal transfer
- 4 microns thick
- Clear and holographic options:
  - Clear
  - Genuine/Secure Hologram
  - Custom Hologram

Interfaces

- Centronics Parallel Standard
- USB port (Optional)

Mechanical

- Width: 31,69" (805mm*)
- Depth: 9,25" (235mm*)
- Height: 10,43" (265mm*)
- Weight: 47,28 lbs (21,45 kg)

Electrical

- 110 ~ 230 Volts AC, 60 ~ 50 Hz
- FCC Class A, CE, UL, and CUL approved

Environmental

- Operating Temperature: 60 to 86°F (15 to 30°C)
- Operating Humidity: 20 to 65% non condensing
- Storage Temperature: -23 to 158°F (-5 to 70°C)
- Storage Humidity: 20 to 70% non condensing
- Ventilation: Free air

Dye sublimation printing requires dye sublimation ribbons,with either black or cyan, magenta, and yellow (plus black resin) panels.

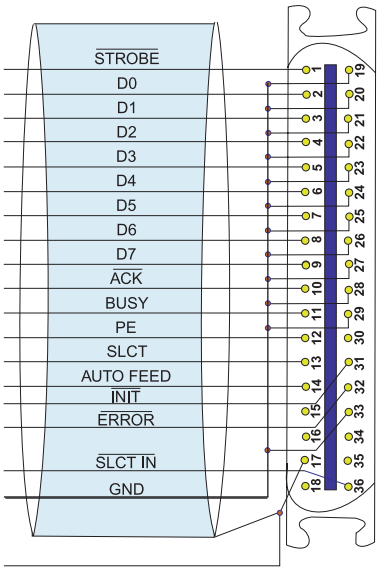
*Measured without card output hopper.

Options

- USB port
- Smart card Contact Station (0.76mm cards only)
- Magnetic Encoder (0.76mm cards only)
- Cleaning supplies

CENTRONIC CABLE INTERFACE

The above drawing shows the required connections to use the printer centronic interface.



Printer Pin	Lign Name
1	-STROBE
2	DO
3	D1
4	D2
5	D3
6	D4
7	D5
8	D6
9	D7
10	-ACK
11	-BUSY
12	PE
13	SLCT
14	-AUTO FEED
32	-ERROR
31	-INIT
36	SLCT IN
19-30-33	GND

Note: The printer pins number 15, 16, 18, 30, 34, 35 are not connected.

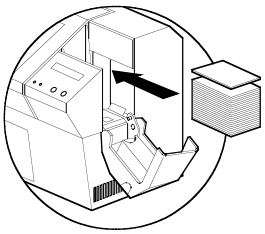
Magnetic Card Stripe Encoder

This section contains information on the additional operations of the K 500 Optima Printers with Magnetic Card Stripe Encoder.
(See Chapter 2 for location.)

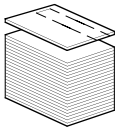
INTRODUCTION

Operation and maintenance requirements for the K 500 Optima Printer with the optional magnetic card stripe encoder.
(See Chapter 2 for location.)
The magnetic encoder can be set for either high or low coercivity.

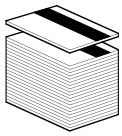
A • MEDIA LOADING ORIENTATION



The magnetic encoder is a factory installed item with the read/write head positioned below the card path, available with HICO encoding or LOCO encoding.



When loading cards into the Card Cartridge, please ensure that the magnetic stripe is facing down and closest to the rear.
Also available are Printer models with the Magnetic Read/Write head positioned above the card path, with HICO encoding or LOCO encoding.



When loading cards, please ensure that the magnetic stripe is facing up and closest to the rear.

Note:

M1 = Stripe Down HICO M3 = Stripe up HICO

M2 = Stripe Down LOCO M4 = Stripe up LOCO

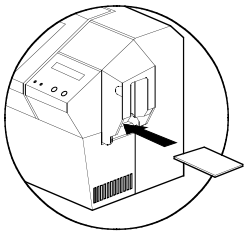
approved HICO & LOCO PVC cards are available.

ONLY USE cards that comply with ISO 7810 & 7811 standards for magnetic stripe cards. The magnetic stripe must be flush to the surface of the card to work properly. Never use cards which have taped-on magnetic stripes.

B • MAGNETIC ENCODER CLEANING

There exists two different processes to clean the Magnetic stripe Encoder.
The first process consists of a standard cleaning of the printer. This cleans the most important parts of the printer; including the print Head, Transport Roller and Magnetic Stripe Encoder (refer to chapter 4 “Cleaning” for more instructions.)

The second process consist of a cleaning of the Magnetic Encoder using the Menu Button from the LCD Display.
To access the Magnetic Cleaning Menu proceed as below:



1 • Leave power on.

2 • Remove cards from the card feeder.

3 • Insert one presaturated card (provided) through slot on the side of the Card Cartridge.

4 • Press the Menu button until the LCD screen shows CLEANING MENU.

5 • Press the Select button to select.

6 • Press the Menu button again until the LCD screen shows CLEAN MAG HEAD.

7 • Run this operation by pressing the select button.

ISO STANDARD ENCODING

Track #	Field Separator	Track density	Valid Characters	# of characters
1	^	210BPI*	Alphanumeric (ASCII 20 - 95**)	79***
2	=	75BPI*	Numeric (ASCII 48 - 62)	40***
3	=	210BPI*	Numeric (ASCII 48 - 62)	107***

* Bit per inch

** Except the “?” character

*** Including Start, Stop and LRC characters. Also note that these 3 characters are automatically managed by the magnetic encoder according to the ISO Standard norms.

NOTE: Refer to the Card Printer Programmer’s Manual for complete programming information.

APPENDIX B

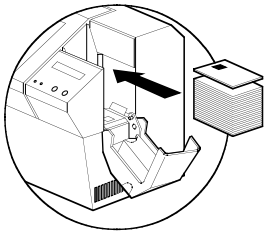
Smart Card Contact Station

This section contains information on the additional operations of the K 500 Optima Printers with Smart Card Contact Stations.
(See Chapter 2 for location.)

INTRODUCTION

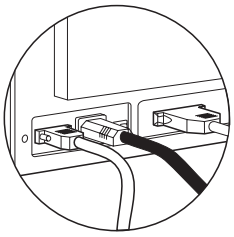
Your K 500 Optima may be equipped with an optional Smart Card contact station.
Smart Cards can store fingerprints, voice recognition patterns, medical records and other such data. This printer model basically responds to commands that position the cards to the contact station, where the printer connects the pins to the contacts connector on the Smart cards.
An external “encoder/reader” is necessary for programming Smart Cards (ISO 7816).
All other printer operations remain the same as the standard K 500 Optima model.

A • MEDIA LOADING ORIENTATION



Position the cards with the Smart Card Chip at the top of the card and towards the printer.

B • SMART CARD CONTACT STATION INTERFACE



When a command to the parallel printer interface sends a card to the Smart Card Contact Station, the printer connects the Smart Card Contact Station to the female DB-9 connector on the rear of the printer. An attached external Smart Card Programmer can be used to program Smart card chips

DB - 9 PINS	SMART CARD CONTACT POINTS	DB - 9 PINS	SMART CARD CONTACT POINTS
1	CI (VCC)	6	C6 (Vpp)
2	C2 (Reset)	7	C7 (I/O)
3	C3 (Clock)	8	C8 (RFU)
4	C4 (RFU)	9	(GND when chip is at station)
5	C5 (GND)		

Refer to the Card printer programmer's Manual for complete programming information.

DO NOT position printing over the Smart Card Chip.